Research into the violent Atlantic storm

8 December 2011 - Today's violent storm in Scotland is a reminder of the enormous impact that weather can have on our lives, and of the paramount need for accurate forecasts of high winds.

To help improve future forecasts, scientists from the UK academic community and the Met Office are using the Facility for Airborne Atmospheric Measurements (FAAM) research aircraft to probe this storm, using specialist instrumentsto measure the winds, temperature and humidity, and cloud particles.

The aircraft is also able to drop small instrument packages through the storm to measure profiles of wind, temperature and humidity. The data from these instruments was relayed back to Exeter by satellite link and used in producing the next forecast. Today it flew from Exeter north to Stornoway before sampling the south-west region of the storm, west of Scotland. Then after refuelling in Tees-side it measured the storm again over Eastern Scotland.

The flights are being conducted as part of DIAMET , a joint project between the National Centre for Atmospheric Sciences , Natural Environment Research Council and the Met Office as part of our programme of continually improving our ability to forecast high-impact weather.

Larger-scale storm systems that may be forecast well, typically contain localised regions of particularly severe weather, that are much harder to forecast accurately. These smaller regions, where much of the storm damage is often concentrated, are much more difficult to forecast than the storm itself, especially more than a day ahead. Our study of today's storm will be a major opportunity to improve such forecasts.

A selection of some of the highest winds recorded around the UK on Thursday are:

Selection of highest wind gust speeds 8 December 2011

Location	Maximum gust speed (mph)
Cairngorm Summit	165 mph
Aonach Mor	145 mph
Tiree	90 mph
Dunstaffnage	86 mph
Aberdaron	81 mph
Church Fenton	73 mph
Glasgow, Bishopton	71 mph
Edinburgh, Gogarbank	69 mph
St Bees Head	74 mph
Mumbles Head	62 mph

FAAM research flight into Scottish storm (PDF, 84 kB)

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